ABSTRACT

The device for the pixel-by-pixel photoelectric measurement of a planar measured object includes projection means (3,21) for the imaging of the measured object (M) onto a two-dimensional CCD image sensor (22), filter means (66) provided in the imaging light path for the wavelength selective filtering of the measuring light impinging on the image sensor, signal processing means (23) for the processing of the electrical signals produced by the image sensor and for the conversion thereof into corresponding digital raw measured data (71), as well as data processing means (7) for the processing of the raw measured data into image data (72) representing the colors of the individual image elements of the measured object. Furthermore, illumination means (4,41-43; 5,51-53) are provided which include a Fresnel lens (42:52), which illuminate the measured object (M) with at least one essentially parallel light bundle under an angle of incidence ($\dot{\alpha}$) of essentially 45° +/- 5°. The projection means which include at least one tele-lens (3) constructed as a Fresnel lens, are constructed as tele-centrical imaging optics (3,21), which image each point of the measured object (M) under essentially the same angle of observation of essentially 0° and with essentially the same aperture angle ($\dot{\alpha}$) of essentially maximally 5° onto the light converter element array (22). The data processing means (7) carry out extensive correction measures.